DOCUMENT RESUME

ED 123 573 CS 002 654

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TITLE The Effect of Passage Organization on Main Idea Comprehension at Three Response Levels.
PUB DATE 76
NOTE 16p.; Paper presented at the Annual Meeting of the International Reading Association (21st, Anaheim, California, May 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Intermediate Grades; *Paragraph Composition; Reading Ability; *Reading Achievement; *Reading Comprehension; Reading Research; *Reading Skills; Rural Education
IDENTIFIERS *Topic Sentences

ABSTRACT

In this study, the effect of a passage organizer (topic sentence) on the ability to identify main ideas was tested. The second purpose of this study was to determine whether main idea comprehension is affected by the type of main idea question asked. Thirty third- and thirty fourth-grade children selected on a random basis from a semi-rural Wisconsin public school were the subjects for this study. The results lend additional support to the theory that passage organization may affect reading comprehension. The implications of this study concerning the effects of passage organization on comprehension are discussed. (RB)

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ED123573

THE EFFECT OF PASSAGE ORGANIZATION ON MAIN IDEA COMPREHENSION AT THREE RESPONSE LEVELS

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(A paper presented at the 1976 Annual Meeting of the International Reading Association, Anaheim, California, May 10-14, 1976.)

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THE EFFECT OF PASSAGE ORGANIZATION ON MAIN IDEA COMPREHENSION AT THREE RESPONSE LEVELS

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Introduction

Identifying the main idea of a passage is a task commonly found in instructional materials and on reading comprehension tests. Despite its frequent appearance (and consequently, its importance) few researchers have examined the nature of main idea comprehension. The result is that, for some people, main idea comprehension is often considered to be a single, simple comprehension task. It was the opinion of the investigators that main idea comprehension is definitely not a single, simple task. Instead, it is proposed that main idea comprehension may really be several related but distinct tasks. To test this notion, two factors that might affect comprehension of the main idea were isolated and studied. The two factors were: passage organization and main idea question type. Two questions were the focus of this study:

(1) Is comprehension of the main idea affected by the organization of the passages read?

(2) Is comprehension of the main idea affected by the type of main idea question asked?

A review of the literature specific to passage organization and main idea question type is presented in the following sections. The first section is a review of the literature related to

passage organization and comprehension. The second is specific to comprehension and main idea question type.

Passage Organization and Comprehension

Karlin (1971) says that the ability to comprehend is enhanced when the reader sees the relationships among the ideas in a passage and recognizes the structure that ties the sentences together. A main idea comprehension task usually requires reading several statements in a passage and synthesizing these ideas into a single central thought. It seems reasonable to assume that passage organization may be a factor that affects main idea comprehension.

Oaken, Wiener and Cromer (1971) attempted to determine whether the ability to organize passage content affects comprehension. They compared subjects' ability to organize information with their ability to comprehend a passage. They found that even when a reader can decode words readily, he may have difficulty comprehending a passage if he does not organize the ideas presented in a meaningful way. They suggested that: (1) reading instruction should focus on teaching organizational techniques; and (2) that for some readers, preorganized material should be provided to facilitate comprehension.

Ausubel and Fitzgerald (1962) studied the effect of an advance organizer on passage comprehension. According to Ausubel (1962) the advance organizer does the following for the reader:

> (The advance organizer) (a) gives him a general overview of the more detailed material in advance of his actual confrontation with it, and (b) also provides organizing elements that are inclusive of and take into account most relevantly and efficiently the particular content contained in this material. (p. 221)

Ausubel and Fitzgerald found that when they provided an advance organizer, passage comprehension improved for subjects with little verbal ability, but remained unchanged for subjects with average or above-average ability.

Smith and Hesse (1969) studied the effect of an oral cognitive organizer on passage comprehension of good and poor readers. Like the advance organizer, the oral cognitive organizer familiarized the reader with the general content and organization of the passage read. Smith and Hesse found that the oral cognitive organizer had little effect on passage comprehension for the good reader, but did have a significant positive effect on the poor readers' ability to determine passage main idea.

A study on passage organization and comprehension quite different from the previous studies was done by Gagne (1969). Gagne studied the effect of inserting a passage organizer in passage content on factual recall. A passage organizer was a topic sentence designed to help the reader relate the facts presented. Gagne asked subjects to recall facts presented both with and without passage organizers (i.e., topic sentences) and found that facts were retained significantly more often when they were organized for the subjects with a passage organizer.

One purpose of this study was to determine whether main idea comprehension is affected by the organization of the passages read. From the studies done on passage organization and comprehension, it would seem that the ability to detect or sense passage organization affects comprehension. From the Ausubel and Fitzgerald, Smith and Hesse, and Gagne studies it also seems

that tools or techniques for helping the reader sense passage organization may improve comprehension-at least for subjects of low verbal ability or for those subjects identified as poor readers. In this study, the effect of a passage organizer (topic sentence) on the ability to identify main idea was tested.

Question Type

The level of response required by the type of main idea question asked was identified as another factor that might affect performance on a main idea comprehension task.

Otto, Barrett, and Koenke (1969) tested second and fifth grade childrens' ability to generate a main idea statement for passages read. They found that the second grade subjects were not able to generate adequate main idea statements, but wer able to respond with accurate title-like statements. They suggested that further research might indicate that instruction in deriving a formal main idea statement (a more sophisticated main idea task) should be postponed until the later elementary school years.

Williams and Stevens (1972) asked subjects in grades 3-6 to (1) underline the topic sentence in passages that they read, and (2) write a title for the passages. Like the Otto, Barrett, Koenke study, Williams and Stevens found that 50% of the subjects were able to write an acceptable title, while fewer (40%) could underline the topic sentence.

A survey of a few basal reading series revealed that most of the authors of elementary reading texts believe that "getting the main idea" is an aspect of comprehension that

should be included in reading instruction. Even though the basal texts that were surveyed provided activities for teaching "main idea" there was an inconsistency among the activities which seemed to suggest a lack of consensus concerning a definition of this aspect of comprehension. In some of the activities, students were asked to identify a topic by choosing the best title of a selection. At the lower levls of one series, selecting the best title was used to measure the ability to identify the topic and the ability to determine the main idea. At the upper levels of this same series, distinctions were made between topic, main topic, and main idea.

Because of the results of the research that has been done in this area, and because of the inconsistency among main idea activities in the elementary basal reading series, the second purpose of this study was to determine whether main idea comprehension is affected by the type of main idea question asked. In this study, three main idea question types were identified, each requiring what was considered to be three distinct response levels. A topic main idea question required a one- to three-word response that told generally what the passage was all about. A title main idea question asked for a topic made more explicit by qualifiers such as prepositional phrases, adjectives, adverbs. A main idea statement question required a complete sentence that told what the entire passage was about, i.e., a topic sentence.

Procedure

Subjects

Thirty third and 30 fourth grade children from a semi-rural Wisconsin public school were the subjects for this study. The

subjects were selected on a random basis from the total population of 150 third and fourth grade children in this school. Only third and fourth grade subjects reading at a 3.0 grade level or better on the Reading Comprehension Subtests of the Stanford Achievement Test (Primary Levels 2 and 3 respectively) were included in the study to assure that all subjects would be able to successfully decode the test passages.

Materials

Twenty test passages were written for this study. Ten of the 20 passages had no passage organizer, i.e., topic sentence. The remaining passages were identical to the first ten in content, but passage organizers or topic sentences had been added. Each passage ranged in length from 50 to 60 words and had a readability score of between 2.6 and 2.9, according to the Spache Readability Formula. Most of the passages were factual, while a few were narrative. Each passage had five to six sentences that supported the main idea. Three questions testing general topic, title, and main idea statement recognition were written for each passage. The topic question required a one- to three-word general response to the main idea of the passage. The title question asked for a topic plus a qualifier. A summary of all the details in the form of a complete sentence was required in the main idea statement question. The incorrect answer choices for each question referred to details from the passages. The questions were ordered randomly for each passage.

Testing Procedure

Individual test booklets were assembled using a multiple matrix sampling procedure to assure that each of the twenty

passages was distributed randomly among subjects. Via this procedure, each subject was assigned ten different passages, five with passage organizers, and five without. Thus, every subject read and responded to 30 main idea questions: five topic, five title, and five main idea statement questions each on passages with and without organizers. Each of the twenty passages was read by fifteen subjects at both the third and the fourth grade levels. After the passages were assigned to the individual booklets, the items within each booklet were ordered on a random basis.

The subjects were tested within their classrooms by their regular classroom teachers. The test was administered in two sittings, approximately 25 minutes each. The test, however, was not timed. Following an example item, the subjects worked independently; help with pronunciation was given when necessary.

Results

The design of the study was a 3x2 randomized block with repeated measures on both factors (Kirk, 1968). The factors were (1) Question type, i.e., topic, title, and main idea statement, and (2) passage organization--no organizer, organizer. The results of the analysis of variance for the 3rd and 4th grade subjects are given in Tables 1 and 2.

/ Insert Tables 1 and 2 about here /

As indicated by the two tables, the organization variable was significant at the .01 level for the fourth grade subjects. It was not significant, however, for the 3rd grade subjects.

The question type variable was significant for both the 3rd and 4th grades, again at the .01 level. No significant interaction between factors was found for either population. The significant subjects effect for both samples was expected, but not examined in this study, as the primary interest concerned treatment, rather than subject differences.

The cell means for both the third and fourth grade subjects are given in Table 3. The highest mean score possible for each response type was 5.0. The mean response for each category was very high. This was especially true of the topic and title means for both passages with and without organizers.

/ Insert Table 3 about here /

Passage Organization

As indicated in Table 3, the overall mean response for both the 3rd and 4th grade subjects was greater for passages with organizers than for passages without. The means for the third graders were 4.57 with organizer and 4.52 without, while for the fourth graders the means were 4.58 and 4.16, respectively. As stated earlier, this difference was significant for the fourth grade subjects only. Although third graders tended to have higher means on passages with organizers, the analysis of variance revealed that these differences were not significant.

Question Type

Looking at the means in Table 3, it is clear that for both 3rd and 4th grade subjects, the mean responses were highest for topic, then title, then main idea statement questions, in that

order. This was true for passages with organizers as well as for those passages without. The overall means (i.e., the average across passage organization) for the third graders were 4.8 on topic, 4.58 on title, and 4.26 on main idea statement questions, while for the fourth graders, the corresponding means were 4.73, 4.46, and 3.93. A Tukey's post hoc analysis was performed on these means to determine any significant difference. The difference between topic and main idea statement means was significant at the .01 level for both the third and fourth grade subjects. The title and main idea statement response difference was also significant for both grade levels. No significant difference was found between topic and title responses. This might be attributed to the limitation of the test range, i.e., most of the subjects responded correctly to the topic and title questions.

Discussion

Passage Organization

Is Comprehension of the main idea affected by the organization of the passages read? The results of this study lend additional support to the notion that passage organization may affect reading comprehension. In this study, one aspect of passage organization was identified and its effect on a single aspect of reading comprehension was tested. It was found that main idea comprehension was greater on passages with organizers at least for one sample. That is, the scores were significantly greater on passages with organizers for the fourth, but not for

the third grade subjects. One explanation for the third grade results is offered for discussion here. As stated in the introduction to this study, several researchers have investigated the effects of various organizers on reading comprehension. They have found that organizers significantly affect poor readers' comprehension, but have little effect on comprehension for good readers. These findings have been interpreted by some to mean the following: (1) good readers impose some organizational structure on passages as they read, thus having little need of advanced or explicitly stated passage organizers; (2) poor readers, on the other hand, tend not to organize material independently; so, tools or aids for organizing passage content seem to enhance their comprehension. Generalizing from the above findings, it is possible that a passage organizer or topic sentence would function more as an organizing tool for poor than for good readers. No attempt was made to differentiate good from poor readers in this study, but, specifying a 3.0 or better reading level as criteria for subject selection undoubtably limited the third grade sample to good readers. The fourth grade sample, on the other hand, could have included relatively poor as well as good readers. Comparing the means for the third and fourth grade subjects seems to support this point. The topic, title, and main idea statement means on passages with organizers are almost identical for the two samples; the means for passages without organizers were actually higher for the third grade than for the fourth grade subjects, implying third grade superiority. If it were true that good readers

benefit little from organizational aids, then it would not be surprising that no significant differences were found between passages with and without organizers for the third grade sample, yet were evident for the more diverse fourth grade population. While this explanation is conjecture, it does appear to warrant investigation.

One implication of this study is the apparent need to evaluate the materials children are expected to comprehend. More specifically, it is important to consider passage organization when asking for main idea comprehension, bearing in mind that it is easier to comprehend the main idea of passages with organizers than without. This does not mean that main idea should be taught using passages with passage organizers or topic sentences only, or that all passages should have well developed topic sentences, but rather, that it is important to acknowledge the differences between the two main idea tasks. A teaching sequence that acknowledges these differences would include teaching main idea of passages with topic sentences prior to teaching main idea of passages without.

This study raises several questions about the effect of passage organization on comprehension. The role of a passage organizer in organizing materials for poor readers should be investigated. If inserting a topic sentence into passage content increases comprehension performance for poor readers, then more attention should be given to using topic sentences as comprehension tools for poor readers. Second, a passage

organizer, or topic sentence, is only one aspect of passage organization. Other aspects should be identified, and their effects on reading comprehension determined. Finally, the effects of passage organization on tasks other than main idea comprehension should be studied. Even though a topic sentence organizes content and aids identification of the main idea, it might not facilitate comprehending passage details, understanding sequence, or drawing conclusions.

Question Type

Is comprehension of the main idea affected by the type of main idea question asked? The findings of the study seem to suggest that there may be levels of main idea comprehension. In this study, at least two discrete main idea response levels were identified: a general response (topic or title) and a more discriminating response (main idea statement). Based on these findings, the teaching and testing of main idea comprehension should acknowledge the differences between topic/title and main idea statement questioning. They seem to be two different tasks, one obviously easier than the other. It would appear that the type of main idea question asked by the teacher or the testmaker would depend on the objective of the instruction or assessment. If the objective of instruction or assessment is a general awareness of the passage content, then topic/title questioning may be appropriate. If the goal of instruction or assessment is a finer level of main idea discrimination, then questions that ask for more than a general response would be required.

From the findings of this study, a possible instructional

sequence could be inferred. An instructional sequence for main idea comprehension might begin with teaching the child to identify a topic or title prior to working with identifying topic sentences or summary statements.

Future research might attempt to test the hypothesis that subjects at any grade level can learn to respond to a main idea task at any response level.

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Table 1

THE ANALYSIS OF VARIANCE FOR THIRD GRADE SUBJECTS

Source	SS	df	Ms	F
Subjects	21.38333	29	.737356	5.3821 *
Organizer/No Organizer	.13889	1	.138889	.3565
Topic/Title/Main Idea	8.63333	2	4.316666	11.1409 *
Interaction	.21111	2	.105556	.27099
Residual	56.18311	145	.38746	

* $p < .01$

Table 2

THE ANALYSIS OF VARIANCE FOR FOURTH GRADE SUBJECTS

Source	SS	df	Ms	F
Subjects	77.9778	29	2.688889	6.4179 *
Organizer/No Organizer	8.0222	1	8.02223	19.146 *
Topic/Title/Main Idea	19.9111	2	9.95554	23.76023 *
Interaction	1.6444	2	.82221	1.9623
Residual	60.7550	145	.41900	

* $p < .01$

Table 3

CELL MEANS FOR THIRD AND FOURTH GRADE SUBJECTS

BY QUESTION TYPE AND PARAGRAPH ORGANIZATION

		Topic	Title	Main Idea	Across Topic/Title/ Main Idea
Third	Organizer	4.83	4.56	4.33	4.57
	No Organizer	4.76	4.60	4.20	4.52
	Across Organization	4.80	4.58	4.26	4.55
Fourth	Organizer	4.83	4.66	4.26	4.58
	No Organizer	4.63	4.26	3.60	4.16
	Across Organization	4.73	4.46	3.93	4.37